

What the Heck is an Invasive Plant?

You say it's nifty, and I say it's *noxious*.
You say it's lovely, and I say it's *lousy*.
Nifty, noxious, lovely, lousy -
Let's call them what they are!

What is a Native Species? All organisms are native to planet Earth (until further notice) and each species of bacteria, fungi, plant, animal, and other creature has a home somewhere on this planet where it has existed and evolved for thousands of years. A native or indigenous species is one that occurs in a particular place without the help of humans, which is not always easy to determine. Species native to North America are generally recognized as those occurring on the continent prior to European settlement.

An organism's home, or native range, is determined by a host of influences such as climate, geology, soils, hydrology, biological interactions, and natural dispersal. Creatures are dispersed within their natural ranges by various means including air, water, animals, and migrations. Beginning with Columbus' discovery of America in the 15th century, people have played an increasingly significant role in moving plants, animals and other organisms around the world, to places far beyond their likely natural dispersal ranges. And this is where the trouble lies!

What's an Exotic Species? An organism is considered exotic (alien, foreign, non-indigenous, non-native) when it has been introduced by humans to a location(s) outside its native or natural range. This designation applies to a species introduced from another

continent, another ecosystem, and even another habitat within an ecosystem.

For example, black locust (*Robinia pseudoacacia*), a tree that is native to the southern Appalachian region and portions of Indiana, Illinois and Missouri, was planted throughout the U.S. for living fences, erosion control, and other uses for many years. Black locust is considered exotic outside its natural native range because it got there by human introduction rather than by natural dispersal. Another example is saltmarsh cordgrass (*Spartina alterniflora*), a wetland plant that is native to eastern North American estuaries. Saltmarsh cordgrass was introduced to western North American shoreline habitats, where it did not occur previously. It has established and become a serious invasive species, displacing native species and adversely impacting wetland communities.

European settlers brought hundreds of plants to North America from their home lands for use as food and medicine, and for ornamental, sentimental, and other purposes. Introductions of exotic plants continue today and are greatly increasing due to a large and ever-expanding human population, increased international travel and trade, and other factors.

Once an Exotic, Always an Exotic! An estimated 3,500 species of exotic plants have escaped cultivation in the U.S., are able to reproduce in the wild, and have become established, or "naturalized". These plants, however much a part of our current landscapes and ecosystems, are nonetheless

exotic, since they were moved here by people. For centuries, horticulturists have imported and disseminated interesting new exotic plants. Unfortunately, many of these have become invasive pests that are having serious impacts to native species and ecosystems.

What Makes an Exotic Species Invasive? (When is a Guest a Pest?)

Many non-native species exist in apparent harmony in environments where they were introduced. For example, a relatively small number of exotic plants (e.g., corn, wheat, rice, oats) form the basis of our agricultural industry and pose little to no known threat to our natural ecosystems. The most important aspect of an alien plant is how it responds to a new environment. An invasive species is one that displays rapid growth and spread, establishes over large areas, and persists. Invasiveness is characterized by robust vegetative growth, high reproductive rate, abundant seed production, high seed germination rate, and longevity. Some native plants exhibit invasive tendencies in certain situations.

How Many Plants are Invasive?

According to the Plant Conservation Alliance's Alien Plant Working Group, about 1,100 plant species have been reported as being invasive in natural areas in the United States (see link below). This number represents an astonishing one-third or so of the exotic plant species

established and self-reproducing in the wild. Some invasive species were planted intentionally for erosion control, livestock grazing, wildlife habitat enhancement, and ornamental purposes. Others have escaped from arboretums, botanical gardens, and our own backyards. Free from the complex array of natural controls present in their native lands, including herbivores, parasites, and diseases, exotic plants may experience rapid and unrestricted growth in novel environments.

How Bad Are Invasive Species?

Invasive species impact native plants, animals, and natural ecosystems by:

- Reducing biodiversity
- Altering hydrologic conditions
- Altering soil characteristics
- Altering fire intensity and frequency
- Interfering with natural succession
- Competing for pollinators
- Poisoning or repelling native insects
- Displacing rare plant species
- Increasing predation on nesting birds
- Serving as reservoirs of plant pathogens
- Replacing complex communities with single species monocultures
- Diluting the genetic composition of native species through hybridization

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For additional information, please go to:

Alien Plant Working Group 'Weeds Gone Wild' -- <http://www.nps.gov/plants/alien>
Aquatic Nuisance Species Task Force -- <http://www.anstaskforce.gov>
Ecological Society of America -- <http://esa.sdsc.edu/invas3.htm>
Lady Bird Johnson Wildflower Center -- <http://www.wildflower.org/>
Mid-Atlantic Exotic Pest Plant Council -- <http://www.ma-eppc.org>
National Audubon Society -- <http://www.stopinvasives.org/>
National Invasive Species Council -- <http://www.invasivespecies.gov/council/main.html>
National Park Service EPMT -- <http://www.nature.nps.gov/epmt/>

TNC Wildland Invasive Species Team -- <http://tncweeds.ucdavis.edu>
US Geological Survey -- <http://www.nbii.gov/search/sitemap.html>